UNITED
NATIONS

A

General Assembly

Distr.
GENERAL

A/AC.105/PV.374
8 July 1992

ENGLISH

COMMITTEE ON THE PEACEFUL USES OF OUTER SPACE

VERBATIM RECORD OF THE 374th MEETING

Held at Headquarters, New York,
on Monday, 22 June 1992, at 3 p.m.

Chairman: Mr. HOHENFELLNER (Austria)

- Organization of work
- Report of the Legal Subcommittee on the work of its thirty-first session (continued)
- Organization of work

This record is subject to correction.

Corrections should be submitted in one of the working languages, preferably in the same language as the text to which they refer. They should be set forth in a memorandum and also, if possible, incorporated in a copy of the record. They should be sent, within one week of the date of this document, to the Chief, Official Records Editing Section, Office of Conference Services, room DC2-750, 2 United Nations Plaza.

Any corrections to the records of this meeting and of other meetings will be issued in a corrigendum.

92-60839 9114V (E)

The meeting was called to order at 3.20 p.m.

ORGANIZATION OF WORK

The CHAIRMAN: It is the Chair's intention to begin our consideration of agenda item 10, "Spin-off benefits of space technology: review of current status", as soon as possible - possibly tomorrow afternoon - after we have completed our consideration of agenda item 8. Therefore, I again ask delegations wishing to speak on agenda item 10 to inscribe their names on the list of speakers as soon as possible.

REPORT OF THE LEGAL SUBCOMMITTEE ON THE WORK OF ITS THIRTY-FIRST SESSION (A/AC.105/514) (continued)

Mr. ZAWELS (Argentina) (interpretation from Spanish): Just a few weeks ago in Geneva the report of the Legal Subcommittee on the work of its thirty-first session (A/AC.105/514) was adopted. The document bears eloquent testimony to the intensive, fruitful and cordial session, which was held under the expert chairmanship of Ambassador Vaclav Mikulka. The Argentine delegation reiterates the importance it attaches to the overall objective of the Legal Subcommittee: the progressive development of space law. We also believe that that development of international law should promote international cooperation, the development of research and the preservation of the peaceful nature of the exploration and utilization of outer space, taking into account the interests of all countries, particularly those that are relatively less developed in space matters.

The Working Group on the elaboration of draft principles relevant to the use of nuclear power sources in outer space worked intensively with the aim of finalizing the adoption of the principles. In this context, we should like to highlight the working paper (A/AC.105/C.2/L.154/Rev.11) submitted by the delegations of Canada and Germany, which my delegation supports and which should constitute the final basis of a consensus agreement. I repeat that the

(Mr. Zawels, Argentina)

current session gives an important opportunity to achieve that objective, which would be of real benefit to the whole international community.

The Working Group on the legal aspects related to the application of the principle that the exploration and utilization of outer space should be carried out for the benefit and the interests of all States, taking into particular account the needs of developing countries, held its first substantive session under the able chairmanship of Mr. Raimundo Gonzalez. Its deliberations were based on the working paper submitted by a number of countries, including Argentina, on principles regarding international cooperation in the exploration and utilization of outer space for peaceful purposes.

The discussion on that reference paper was frank and constructive. The assessment and reaction of other delegations are now clear to the sponsors. In many cases there were misunderstandings which I believe must now have been cleared up. This will undoubtedly be reflected in a new, revised, version of the paper, which will be ready for the next session of the Legal Subcommittee.

In this context, we share the view expressed today by the delegation of Germany, that it is important to reflect in the consideration of this item the important experience of bilateral and regional space cooperation, which has been going on for some years and from which my country has benefited and continues to benefit. It is also necessary to be clear that international cooperation is not a compulsory activity, but results from the voluntary decision of States.

The Working Group on the definition and delimitation of the geostationary orbit also experienced intensive activity in its debates. The working paper (A/AC.105/C.2/L.189) submitted by the delegation of the Russian Federation on

(Mr. Zawels, Argentina)

questions concerning the legal regime for aerospace objects undoubtedly contributed to that. The paper highlighted a number of questions on aerospace objects which not only led to a positive and rich exchange of opinions but also prompts further consideration of the subject and a closer study of existing information on it.

Today we heard a very interesting and stimulating statement by the Colombian delegation, which we thank for its efforts and hard work in clarifying and promoting the study of this complex issue.

The Subcommittee examined the informal working paper submitted by a group of countries belonging to the Group of 77. Proposals were made, and they will be reflected in a revision of that paper, which is now being prepared by the delegations concerned.

My delegation supports the consideration of this item and the need to elaborate a separate legal regime on the geostationary orbit. We believe that many aspects need to be dealt with, including, as a priority, the subject of space debris in that orbit.

(Mr. Zawels, Argentina)

Lastly, I should like to emphasize once again the positive atmosphere that prevailed during the session of the Legal Subcommittee at Geneva. That facilitated dialogue among the delegations and the search for common ground for our work. Space cooperation must begin in the Committee on the Peaceful Uses of Outer Space and in the search for common norms that will promote the exploration and utilization of outer space while safeguarding the possibility for the relatively less-developed countries to participate, in the nearest possible future, in this exciting adventure of mankind.

Mr. RASHKOW (United States of America): I appreciate the opportunity to address the Committee under item 8 of its agenda concerning the report of the Legal Subcommittee.

Allow me first to turn to the Subcommittee's work on the use of nuclear power sources in outer space. As we are all aware, the Committee has been engaged over the past 12 years in an effort to develop a set of principles that are balanced, place a high priority on safety and are realistic from a technical point of view. The United States has from the outset fully supported the Committee's activities and efforts in this regard. As the United States has urged throughout all of our deliberations on this important subject, the Subcommittee should endeavour to ensure that the highest scientific and technical standards are met in every one of the recommendations that it is developing.

As members know, the delegation of the United States has proposed certain clarifications and modifications in draft Principle 3 in order to enhance the utility of the principles through improvements to their scientific and technical underpinnings. My delegation is disappointed in the concerns that some delegations have expressed about the impact of our proposals on the effort to complete these principles.

(Mr. Rashkow, United States)

Let no member of the Committee mistake the commitment of the United States to the prompt completion of these principles. As a country with a large population and a vast land mass, the United States places the highest priority on the safe use of nuclear power sources in outer space by all countries. The enormous research and development conducted by the United States in this area clearly reflect this commitment.

The United States has proposed clarifications and modifications in draft Principle 3 because it takes the Committee's work in this area seriously and because it believes that the concerns it has identified are sufficiently important to require the proposed changes before the principles are submitted to the General Assembly.

My country was grateful for the consideration given by other delegations to our proposals in the Scientific and Technical and Legal Subcommittees and for the constructive efforts to bring proposals to address the technical concerns identified by the United States. My delegation welcomed the considerable progress that was made in this regard at the last session of the Legal Subcommittee, under the very able leadership of Mr. Franz Cede, Chairman of the Working Group on this subject. While these efforts have brought us close to the completion of these important principles, more remains to be done to make these draft principles more technically accurate and realistic.

My delegation is working actively with other delegations to build on the progress already made and to make further progress during this session of the Committee. In this regard I want to underscore the intention of my Government to work with other delegations in order to bring the negotiation of the full set of principles to a prompt and satisfactory conclusion.

(Mr. Rashkow, United States)

I now turn to the Subcommittee's item entitled "Consideration of the legal aspects related to the application of the principle that exploration and utilization of outer space should be carried out for the benefit and in the interests of all States, taking into particular account the needs of developing countries". As members are all aware, this item reflects a carefully balanced formulation that was intended to lay the groundwork for discussion over the next few years on the application of article I of the 1967 Treaty on outer space. In this regard my delegation notes that the new item provides only for an exchange of views on this important matter. It does not provide a mandate for negotiation of a new international regime.

The early work of the Committee on this item has focused on the collection of information from Member States regarding their national legal framework, as appropriate, relating to the application of the principle contained in article 1 of the 1967 outer space Treaty and regarding international agreements concluded by Member States that are relevant to that principle. At the last session of the Subcommittee the Chairman of the Working Group on this item presented a paper summarizing in an analytical manner the information and views provided by Member States. In the view of our delegation that paper constitutes an important contribution to the work of the Subcommittee on this subject and should be the focus of our work for the next sessions.

I now turn to the remaining item on the Subcommittee's agenda, the definition and delimitation of outer space and the character and utilization of the geostationary orbit. My delegation would like briefly to restate its well-known views on this subject.

The absence of a definition or delimitation of outer space, as we are all aware, has not placed practical barriers in the way of the dramatic progress

(Mr. Rashkow, United States)

that has been made in the peaceful exploration and utilization of outer space over the past 30 years. The continued absence of such a definition or delimitation does not, to our knowledge, pose any obstacles to further dramatic progress for the foreseeable future. Quite to the contrary. As we have consistently emphasized throughout the discussion on this subject, premature attempts to establish such a definition or delimitation may in fact complicate, if not impede, further progress in the peaceful exploration and utilization of outer space.

Turning to the geostationary orbit, we share the view that it is an integral part of outer space. It is not subject to appropriation by claims of sovereignty, by means of use or occupation or by other means. All States enjoy equitable access to its utilization. Moreover, questions relating to the utilization of the geostationary orbit are being addressed effectively in the International Telecommunication Union (ITU). The ITU is responsible, on the basis of treaty arrangements, for the rational, efficient and equitable use of the orbit. In our view the development of a new legal regime is, therefore, unnecessary.

My delegation has detected in recent discussions of the Subcommittee the possibility in the future of a convergence of views on this item. For its part, my country would welcome any convergence of views that rests firmly on respect for the basic tenets of the outer space Treaty of 1967 and on respect for the mandate and activities of the International Telecommunication Union in regard to the rational, efficient and equitable use of the orbit.

(Mr. Rashkow, United States)

Before concluding, my delegation wishes to comment briefly on the progress the Legal Subcommittee has made in improving the methods of its work. At the last session, the Subcommittee agreed to a series of measures intended to enhance its utilization of conference services. We believe that this is a step in the right direction, and we look forward to doing more in the future.

Mr. TETU (Canada): This Committee and its two Subcommittees have been labouring for many years to elaborate a set of international principles governing the use of nuclear power sources (NPS) in outer space. Our objective throughout these years has been to protect the general public from harm caused by satellites containing NPS, should they return to Earth.

Despite their invisibility to the general public, nuclear power sources in outer space, especially in low-Earth orbit, have been a very real presence with a certain risk for quite a few years. Although scientists, engineers and technicians involved in their construction and use have considered them safe, there have been accidents, including the dispersal into the upper atmosphere of large amounts of plutonium 238 as a result of the launch abort of SNAP 9A in April 1964 and the scattering of radioactive debris, some of it highly lethal, over northern Canada in 1978 owing to the re-boost failure of Cosmos 954.

We understand that for the most part we are free of low-Earth orbiting nuclear-powered satellites. However, plans are in the works for a new generation of NPS, some of which may be used in Earth orbit. In this regard, we would cite the plans for the intact, uncontrolled re-entry of NPS under the USA SP100 programme. In cases of re-boost failure, these vehicles would be designed to re-enter intact, with a view to recovering the radioactive fuel on board. However, should the reactor impact with rock on landing or, even worse, with a building, there is expected to be a scattering of radioactive

(Mr. Têtu, Canada)

debris, causing exposure to any humans nearby on a scale substantially higher than 1 mSv per person per year, the goal currently contained in our draft Principle 3. Moreover, even if the space vehicle should avoid rock, it is questionable whether the 1-mSv limit would be met for persons located near the crater caused by the returning spacecraft. We believe we should maintain a clearer picture of the risks, in numerical terms, of such a returning spacecraft hitting rock and the expected amount of radiation exposure to persons located near the point of impact of the returning spacecraft, both for impact with rock or otherwise.

Turning to the work of the Committee, we are very disappointed that despite a spirit of compromise and concession we were not able to reach consensus on all the principles at the last session of the Legal Subcommittee in Geneva, as mandated by General Assembly resolution 46/45. In our view - shared by all delegations but one that have so far spoken to the issue before us - all concerns expressed have been fully addressed by both Subcommittees over the last few years. If we compare the current exercise relating to NPS to the other exercises on which the Committee has embarked over the years, this one has really outlived them all. We also share the concern that the highest scientific standards be met. These standards were debated during the last two years within the Committee and its Subcommittees, and as a result of the debate, the conclusion was reached that agreed principles do not need to be revised, and that in particular Principle 3, which is a key principle, should not be revised. This view is shared, as I mentioned earlier, by all countries but one.

We therefore hope, and we fully expect, that at this session the Committee will be able to conclude these Principles after 13 years of hard work.

Mrs. TYCHUS-LAWSON (Nigeria): Since this is the first time my delegation has spoken here, allow me to express its satisfaction at seeing you, Sir, chairing the work of the Committee. We are confident that with you at the helm, this session will come to a fruitful conclusion. We wish also, through you, to convey our appreciation to Mr. Mikulka of Czechoslovakia for the able manner in which he chaired the last session of the Legal Subcommittee, the report of which is before us in document A/AC.105/514.

The constructive and positive discussions held during the thirty-first session of the Legal Subcommittee did not lead to the adoption of the remaining draft principles on nuclear power sources (NPS), despite the appeal contained in a General Assembly resolution. Since we all attach great importance to the attainment of these principles, we need the understanding of all delegations to adopt them. If each country insists on its own formulation, then agreement will not only be difficult but also impossible. We must move towards constructive compromises that reflect the wishes of all, and in this respect we hope that the remaining draft principles will be adopted at this session.

Concerning the definition and delimitation of outer space and the question of the geostationary orbit, Nigeria's position is well known. We still maintain that the definition and delimitation of outer space can be done in practice and that it is a legal necessity that must be carried out in order to achieve a clear distinction between airspace and outer space. However, my delegation will contribute positively to the discussion of the working paper submitted by the Russian Federation on questions concerning the legal regime on aerospace objects.

On legal aspects related to the exploration and utilization of outer space, my delegation continues to emphasize that the elaboration of the

(Mrs. Tychus-Lawson, Nigeria)

principles regarding international cooperation poses a challenge to the major space Powers to demonstrate by deed their readiness to promote international cooperation in this field. My delegation also wishes to reiterate that the space Powers have a special responsibility to share the advancement of space technology in a manner that is mutually beneficial to all States, and developing nations in particular.

(Mrs. Tychus-Lawson, Nigeria)

Since the establishment of this Committee, space activities for economic and social development have acquired growing importance, and this has necessitated the active involvement of all countries in trying to evolve guidelines and cooperation beneficial to all States, bearing in mind the 1967 outer space Treaty, which embodies the principle that the utilization of outer space should be open to all peoples. It is in this spirit that Nigeria hopes that the exploration and utilization of outer space, which has become a new frontier for human activities, will continue to be carried out for exclusively peaceful purposes. We have every reason to believe that, given current trends in international relations, there is hope for a peaceful universe, especially with the end of the cold war. We should not allow the ever-widening gap between rich and poor nations, as well as the inequitable difference in technological knowledge between them, to become a new threat. This phenomenon should not be allowed to extend into space activities. The developed nations, particularly the space Powers, should harmonize space exploration so as to enable developing countries to acquire technology and to derive related benefits at a cost they can afford.

Mr. PEREZ CREZ (Cuba) (interpretation from Spanish): My delegation wishes to take this opportunity to acknowledge the commendable work being done by the Office for Outer Space Affairs and by the Bureau at this session of the Committee, under your skilful guidance, Mr. Chairman.

Before expressing our views on the issues under discussion on agenda item 8, I should like to point out that the Cuban delegation welcomes the proposal made by the delegation of India that UNISPACE 95 should be held in a third-world country.

(Mr. Perez Crez, Cuba)

Since the last session of the Legal Subcommittee, it has been the view of the Cuban delegation that, in considering the draft principles relevant to the use of nuclear power sources in outer space, we should focus on an analysis of those principles on which we have not yet reached agreement. I believe it is obvious that there is a general consensus among the members of the Committee that the discussion of this issue should be completed as soon as possible. Our country believes that notification of the presence of a nuclear power source on a space object should take place before launching, thus affording some protection to possible recipients in case of accidents during launching and at preliminary stages of the flight. With respect to Principle 4, we believe that safety assessment should take place before each launching and that parameters should be established to be taken into account so that the assessment does not become a quality assessment applicable only to an industrial product. In this respect, it is fundamental that we should emphasize that there is always the possibility of accident.

Another document which was broadly discussed at the last session of the Legal Subcommittee was the one on "Matters relating to the definition and delimitation of outer space and to the character and utilization of the geostationary orbit, including consideration of ways and means to ensure the rational and equitable use of the geostationary orbit without prejudice to the role of the International Telecommunication Union". Cuba favours the delimitation of outer space at 100 kilometres above sea level. We favour that delimitation as being above air space, because we believe that this would strengthen the sovereignty of States and avoid the possibility of disputes. We defend the establishment of legal norms guaranteeing equitable access to the geostationary orbit and its rational use, in accordance with existing

(Mr. Perez Crez, Cuba)

space law, which establishes that outer space is free for exploration and utilization by all countries, regardless of their degree of economic and social development.

We believe that there is a need for a legal regime that takes into account the fact that the geostationary orbit is a limited natural resource and that guarantees its rational and equitable use for developing countries so that they will be able to use it once they have acquired the material circumstances to do so.

The International Telecommunication Union is not a substitute for the Committee; rather it complements it, for it is a highly specialized technical body which, among other things, sees to the allotment and registry of frequencies. We consider that the role of the ITU in no way undermines the primary function of the Committee, which includes resolving the political and legal problems relating to the geostationary orbit.

That is why we maintain our position to the effect that the geostationary orbit is a limited natural resource forming an integral part of outer space over which no State or group of States can exercise sovereignty or any other type of special authority. The immense usefulness of the geostationary orbit for communications is unquestionable, but the developing countries have been at a disadvantage with respect to its exploitation, for they lack the necessary capital and technology. Hence this situation must be remedied so as to ensure that all States have equal access to the orbit and that its rational use remains, above all, for the benefit of the developing countries, including equatorial countries.

Mr. GONZALEZ (Chile) (interpretation from Spanish): Rather than making a formal statement, my delegation feels compelled to raise a point at this stage of our discussion.

(Mr. Gonzalez, Chile)

This morning we expressed our agreement with and our satisfaction at the important contribution made on the subject of the geostationary orbit basically by the delegation of Colombia. In this framework as well, at this session we have acknowledged the very important contribution also made by the Chairman of the Working Group, the representative of Argentina, in order to make progress on this item. None the less, we find with some surprise that, in spite of such important efforts, which meant giving up key positions followed very carefully for many years, we are still confronted by what might be termed a stubborn blockade on the part of certain countries with respect to recognizing that the subject of the geostationary orbit requires a special regime.

(Mr. Gonzalez, Chile)

We understand this on political grounds, but there can be no doubt that there are no legal reasons, and I shall not explain why. I shall put it in the form of a question.

We are told that, on the one hand, in accordance with relevant regulations of the International Telecommunication Union (ITU) and others, there can be no appropriation of the geostationary orbit. But we all know that such appropriation does take place. It does occur. It is done in total contradiction and legal incompatibility with article II of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, of 1967, which prohibits any claims of sovereignty over outer space, and in this case over the orbital segment.

At the same time, we are told that it would not be necessary - at another time they used to assure us it was premature - for there to be a definition or delimitation of outer space, despite the fact that we are all aware - and all of us here in this Chamber have the minimum legal expertise to know it - that the Chicago Convention on International Civil Aviation, of 1944 in its article 1 makes it possible to claim sovereignty over airspace. The question is: How far does that airspace extend?

If we deliberately leave this undefined, it will allow those countries - and let there be no mistake about it - with the requisite technological capacity to lay claim to certain strategic segments, such as the geostationary orbit, with the possibility of emplacing satellites there for an indefinite period. This in turn means that the developing countries, until they attain a space capability, will remain on the sidelines, absolutely unable to gain access to such an important strategic resource.

(Mr. Gonzalez, Chile)

Hence, I believe that the time has come, after so many years of deliberations, for things to be absolutely clear. One aspect - the political - which we understand perfectly well, is the real possibility of technologically advanced States - and we do not single out any particular State - to gain access to a vital resource. But the legal aspect is different. I have never - I repeat, never - heard in the past 10 years a legal argument that could make sense of the idea that there is no need to define and delimit outer space.

The definition and delimitation of outer space have clear consequences with regard to the possibility that access over the orbital segment can also be legally claimed by the developing countries. We must not continue to fool ourselves on this point. For the developing countries, the only real means of self-defence is the possibility of a clear legal framework, a frame of reference in which all of us are truly on an equal footing. That equality, as was quite rightly stated at a meeting in 1983 by a representative of Colombia, has to be based on equity - and equity is nothing but unequal treatment for unequals, taking into account an absolutely objective fact: we live in an unequal world.

Taking into account the new international scene, and the fact that we are always being told that we are embarking on a new international order, we wish, on our part, to draw attention to the necessity for this new international order to take fundamentally into account the needs, aspirations and legitimate rights of all countries the world over, as the outer space Treaty says, regardless of their degree of economic, scientific and technical development.

Mrs. FLORES (Uruguay) (interpretation from Spanish): My delegation, like other delegations that spoke earlier, shares the view that it would be appropriate to adopt draft principles relevant to the use of nuclear power

(Mrs. Flores, Uruguay)

sources in outer space, which could serve as a basis for a future convention on this subject.

My delegation is aware of the fact that this subject has already been discussed at length, and we will therefore not dwell on a consideration of the principles. Nevertheless, given the importance of the subject, it would be appropriate in the future for it to be made clear that nuclear power sources in outer space should be restricted to cases in which they are strictly necessary, that is, when substitute sources of energy cannot be used.

It would also be desirable for us to be consistent with existing instruments of space law when we come to defining the launching State, without prejudice to extending responsibility to those States that launch or manufacture space objects with nuclear power sources on board.

One point which, in our opinion, is of extreme importance and which would be highly useful is the future establishment of a technical commission composed of experts on space activities and on the use of nuclear energy, so that, as happens in respect of other activities - the transport of hydrocarbons by sea or the building of thermonuclear plants - it can establish technical norms and guidelines for the use of nuclear power sources in outer space and be entrusted with monitoring their implementation.

This is based on the fact that the use of nuclear power sources in space, in addition to requiring sophisticated technology, can affect an environment that is the common heritage of mankind and has the potential to cause serious damage, and the developing countries that could be harmed do not have the possibility of evaluating or monitoring this type of activity.

Lastly, should the present draft principles be adopted, it would be appropriate to provide for their periodic review at brief intervals.

(Mrs. Flores, Uruguay)

My delegation considers that the delimitation of outer space and airspace is very important, since their respective legal regimes are substantially different. This is less of a technical problem, as we see it, than one of political will.

My delegation continues to uphold its position that the geostationary orbit is a limited, heterogeneous resource located in outer space and therefore the common heritage of mankind. Its exploration and utilization should be carried out in a rational and equitable way of benefit to all members of the international community. In envisaging a special legal regime, particular account must be taken of the needs of the developing countries.

One of the points that should be dealt with, given the importance of the geostationary orbit and its characteristics, is the question of avoiding pollution, especially as regards the question of space debris.

A particularly appropriate opportunity for an exchange of views on these questions will undoubtedly be the forthcoming Conference of the Americas, to be held in Santiago, Chile, in January next year.

ORGANIZATION OF WORK

The CHAIRMAN: There are no further speakers for this afternoon. I would again urge delegations wishing to speak on agenda item 8 to inscribe their names on the speaker's list without further delay, so that we may conclude its consideration as soon as possible and take up agenda item 10.

The meeting rose at 4.10 p.m.

UNITED
NATIONS

A

General Assembly

Distr.
GENERAL

A/AC.105/PV.375
8 July 1992

ENGLISH

COMMITTEE ON THE PEACEFUL USES OF OUTER SPACE

VERBATIM RECORD OF THE 375th MEETING

Held at Headquarters, New York,
on Tuesday, 23 June 1992, at 10.30 a.m.

Chairman: Mr. HOHENFELLNER (Austria)

- Organization of work
- Report of the Legal Subcommittee on the work of its thirty-first session (continued)
- Spin-off benefits of space technology: review of current status

This record is subject to correction.

Corrections should be submitted in one of the working languages, preferably in the same language as the text to which they refer. They should be set forth in a memorandum and also, if possible, incorporated in a copy of the record. They should be sent, within one week of the date of this document, to the Chief, Official Records Editing Section, Office of Conference Services, room DC2-750, 2 United Nations Plaza.

Any corrections to the records of this meeting and of other meetings will be issued in a corrigendum.

92-60845 9118V (E)

The meeting was called to order at 10.50 a.m.

ORGANIZATION OF WORK

The CHAIRMAN: The Committee will continue this morning its consideration of agenda item 8, "Report of the Legal Subcommittee on the work of its thirty-first session". We shall also take up consideration of agenda item 10, "Spin-off benefits of space technology: review of current status", as soon as we have concluded our consideration of agenda item 8.

I should like to announce that I shall devote this afternoon's meeting to informal consultations of the whole, with full interpretation facilities, on the nuclear power sources issue, and I urge delegations to be here, if possible, at three o'clock sharp so that we can dedicate the whole afternoon to open-ended, informal consultations, during which all delegations will have the opportunity to make their points.

REPORT OF THE LEGAL SUBCOMMITTEE ON THE WORK OF ITS THIRTY-FIRST SESSION (continued)

Mr. LIU Dagun (China) (interpretation from Chinese): First of all, I should like, through you, Mr. Chairman, to express my delegation's thanks to Mr. Mikulka, Chairman of the Subcommittee, for the hard work he has done in chairing the Legal Subcommittee.

My delegation is pleased to note that progress was made on all three main agenda items at the last session of the Sucommittee. Here, I should like to make a few brief comments.

As one of the main agenda items, the use of nuclear power sources in outer space has been before the Subcommittee for the last 13 years. Through many years of hard work in the Sucommittee, particularly through the untiring efforts of the Chairman and the sponsors, agreement was reached on most of the draft principles relevant to the use of nuclear power sources in outer space.

(Mr. Liu Dagun, China)

As of now, only the Preamble, Principle 1A, Principle 4 and Principle 12 are still pending, but all parties fully exchanged views on these questions in the Subcommittee.

While we do not deny the merit of the use of nuclear power sources in outer space, we insist that their use must be based on protecting the environment of the planet and ensuring the safety of mankind. It is precisely because the draft principles under discussion are conducive to the safe use of nuclear power sources in outer space and to the protection of the inhabitants and environment of the Earth that the Chinese delegation has been doing its best to facilitate this exercise.

We believe that the working non-paper submitted by the Chairman of the Working Group adequately incorporated many potentially acceptable views. Taking that working non-paper and document A/AC.105/C.2/L.154/Rev.11 as a basis, and provided that all delegations work together in the spirit of compromise, it will be possible to finalize this text in accordance with operative paragraph 4 (a) of General Assembly resolution 46/45. The Chinese delegation will work hard towards this end with the aim of fulfilling the task entrusted to the Committee by the General Assembly and present it as a gift for International Space Year, as my delegation put it in its statement a few days ago.

As regards the definition and delimitation of outer space, our discussion over the years demonstrates that there are serious differences among delegations. The working paper submitted by the delegation of the Russian Federation on questions concerning the legal regime for aerospace objects was discussed at the last session of the Subcommittee. Although this document merely raised questions and did not attempt to resolve them, it at least

(Mr. Liu Daqun, China)

introduced another perspective, which may help the discussion on some of the issues.

Concerning the geostationary orbit, the Subcommittee conducted a first reading of a working non-paper entitled "Geostationary satellite orbit". The Chinese delegation followed with great interest the discussion on paragraph 7 of this document, and suggested that some of the controversial issues arising from paragraph 4 be referred to the Scientific and Technical Subcommittee for further comment.

We have always believed that some of the functions of the Legal Subcommittee and of the International Telecommunication Union (ITU) are complementary. Therefore, we are in favour of discussing the relevant issues in the Subcommittee and of seeking appropriate and necessary cooperation from ITU in this regard.

With regard to the the question of the spin-off benefits of outer space, the Subcommittee concluded the first reading of working paper A/AC.105/C.2/L.182, entitled "Principles regarding international cooperation in the exploration and utilization of outer space for peaceful purposes". We noted that, while there is still room for improvement with respect to this document, it can serve as a good basis for discussion, and that, despite the differences of opinion, delegations exchanged their views candidly and in good faith. We support this kind of effort to enable more countries to participate in and benefit from activities in outer space through the work of the Subcommittee. The Chinese delegation will continue to participate actively in the deliberations on this principle, and hopes that all countries will show interest in and give stimulus to this process.

(Mr. Liu Dagun, China)

As a developing, spacefaring country, China attaches great importance to the work of the Subcommittee. We have always been of the opinion that the development of space technologies and space activities go hand in hand with the development of space law, and that space law, while it is the product of developments in space technologies, also ensures and facilitates their development. China has always actively participated in the formulation of space law, and has always been positive and constructive towards the work of the Subcommittee. We will continue to approach the various tasks of the Subcommittee with this positive attitude, and look forward to substantial progress in the Committee.

Mr. GORBULIN (Ukraine) (interpretation from Russian): The report of the Legal Subcommittee traditionally becomes the subject of interested discussion, which affirms the importance attached by the members of the Committee to the problems on its agenda. This is quite understandable, as the progressive development of the norms of space law is an essential aspect of strengthening international cooperation in outer space as a whole.

In this connection, we should like to comment briefly on the outcome of the work of the thirty-first session of the Sucommittee.

The very title of item 5 of the Legal Subcommittee's agenda, "Consideration of the legal aspects related to the application of the principle that the exploration and utilization of outer space should be carried out for the benefit and in the interests of all States, taking into particular account the needs of developing countries", gives the gist of the problem, which is that a legal regime must be elaborated which would allow all countries, whatever their level of development, to use the results of human activities in space.

(Mr. Gorbulin, Ukraine)

That could be achieved by determining specific areas of international cooperation and by reaching agreement on the form of cooperation in each area. One example of a priority area for cooperation could be the protection and preservation of space itself. At that level we have carefully to analyse the decisions reached at the United Nations Conference on Environment and Development held in Rio de Janeiro. However, it is already clear that scientific and technological progress is having consequences that require the regulation of human activity.

Therefore, the delegation of Ukraine feels that there is a need rapidly to conclude the work on the elaboration of draft principles relevant to the use of nuclear power sources in outer space. The use of nuclear power sources is yet another scientific step forward in the further exploration and utilization of outer space, since they considerably expand the power potential of spacecraft, but we must also bear in mind their potential danger. Ukraine, which suffered the Chernobyl disaster, realizes that more than anyone. Accordingly, we believe that it is necessary to seek a reasonable balance between nuclear and other sources of energy for spacecraft. The most important matter is to reduce to a technical minimum the likelihood of any accident linked with on-board nuclear power sources.

Moreover, we feel it is necessary to look into the practice of providing information about the launching of spacecraft with nuclear power sources on board and the publication of material assessing their security risk before each launch. There are other legal problems that can be resolved only step by step. It is not possible to reach decisions satisfactory to all countries at each given stage. However, if we move from one stage to the next we can then find general decisions acceptable to all.

(Mr. Gorbulin, Ukraine)

For several years we have been waiting for a solution to the problem of defining and delimiting outer space. Ukraine believes that outer space, to which the sovereignty of States extends, with all its consequences, should be legally delimited and open to free exploration and utilization by all countries. It is well known that a consensus on this issue has still not been formed. Therefore, we need to seek specific ways and means of pushing the issue forward. The possibility of doing this is given by a document introduced at the Subcommittee's session in Geneva about the exploitation of aerospace objects at given altitudes.

As to the question of the nature of use of the geostationary orbit, its very formulation contains well-known contradictions. Everybody recognizes that on the one hand the geostationary orbit is an integral part of outer space and that on the other hand it offers limited resources. How do we resolve this dilemma? If all countries had equal scientific and technological possibilities we could simply divide the entire surface of the orbit among the countries wishing to receive their own part of it. However, that is not realistic. There is only one possible solution: more broadly to use the spacecraft in the orbit in the interests of the whole international community. Work that has been going on in the Legal Subcommittee on those lines for many years should be approved and continued.

Yesterday certain additional comments were made about the use of the geostationary orbit. They related specifically to the possibility of preparing a special legal regime. It is not out of the question that such an approach will become realistic in the future. New proposals allow us to look at the problem with some optimism.

Mr. ORRICO (Mexico) (interpretation from Spanish): As we deal with agenda item 8 the delegation of Mexico would like to make some comments on the three items making up the Legal Subcommittee's programme of work.

As regards consideration of the legal aspects related to the application of the principle that the exploration and utilization of outer space should be carried out for the benefit and in the interest of all States, taking into particular account the needs of developing countries, my delegation has already pointed out that our work should focus on devising a legal framework guaranteeing all States, especially developing countries, access to the knowledge gleaned from space science and technology and its uses, in such a way as to allow them to develop their own capacity in these areas. A first step in that direction would be to draw up a document including guidelines and recommendations on carrying out programmes for international cooperation on space matters. That was the purpose of the document that my delegation, together with others in the Group of 77, presented in 1991. The document proposes a series of principles for international cooperation in the exploration and utilization of outer space for peaceful purposes.

We are encouraged that the document has been accepted as the basis for our deliberations, and we trust that that will allow us to make progress in its substantive consideration. At the last session of the Legal Subcommittee some delegations contended that it was not right to make international cooperation mandatory. The delegation of Mexico completely agrees. That is why we emphasized that the aim of the document submitted by the Group of 77 is in no sense to make international cooperation mandatory; rather, it is only to establish guidelines, within a proper legal framework, for carrying out such international cooperation. We trust that we shall be able to continue our deliberations in the same constructive spirit as has prevailed in the past.

(Mr. Orrico, Mexico)

As for the question of the definition and delimitation of outer space and the character and utilization of the geostationary orbit, we support the argument made by a number of delegations that it is imperative that we reach a consensus on the matter. Indeed, as the delegation of Chile pointed out yesterday, a legal international framework already exists with regard to the utilization and exploitation of airspace. The right of each State to exercise sovereignty over its national or territorial airspace is universally recognized, and the only area in which there is disagreement concerns the limits of such national airspace, a matter that is indissolubly linked with the question of the definition and delimitation of outer space. In other words, the latter begins where the former ends or in a zone immediately adjacent to the ceiling set for national airspace.

Indeed, the solution to the problem of defining and delimiting outer space will not be found on a legal or technical basis; it must necessarily be based on scientific and technological arguments, which will form the foundation for the elaboration of the definition of outer space, if not the legal framework for its regulation.

In this connection we support the proposal by the Russian Federation - put forward in a working paper introducted at the last session of the Subcommittee in Geneva - that we consider the issues that bear on the legal régime applicable to aerospace objects, and the answer to the questions posed by that delegation at the last session of the Legal Subcommittee might be very useful as we seek to arrive at a legal definition and delimitation of outer space.

With regard to the question of the character and utilization of the geostationary orbit, we support the argument advanced by other delegations to

(Mr. Orrico, Mexico)

the effect that we must not sidestep the agreements drawn up by the International Telecommunication Union (ITU) with regard to this issue; those agreements are essential elements to any discussion and to any agreements in the Committee on the Peaceful Uses of Outer Space. At the same time the delegation of Mexico appreciates the innovative approach to dealing with this issue that has been suggested by the delegation of Colombia. We feel that we have sufficient material to begin substantive discussion of this important question.

On the question of the use of nuclear power sources in outer space, my delegation agrees with the widely held opinion that it is extremely important for the Committee to complete work on the draft set of principles at its current session. However, we also feel that the contents of Principle 4, which deals with safety assessment - should be revised to eliminate certain imprecisions and to fill in certain gaps. The imprecisions to which I refer involve the fact that there is no fixed time limit for submission of safety assessments, which, in turn, might make it difficult or even impossible for the concerned States to make a careful analysis of such assessments. In addition, there are no guidelines for resolving areas of nonconformity or conflict that might arise with regard to the assessments provided by the launching State, particularly since Principle 10, on the settlement of disputes, is very general and vague on the subject.

We also consider that the results of such safety assessments must be made public through the United Nations Secretary-General and that we should not confine ourselves merely to informing him on how States may obtain the results of a given assessment. In addition, the delegation of Mexico has noted with concern that, following the last session of the Scientific and Technical

(Mr. Orrico, Mexico)

Subcommittee, the idea has begun to circulate that we should limit the scope of the draft principles to electric power on board space objects, as stipulated in the fifth paragraph of the Preamble proposed by a group of delegations. We regret that some of the informal consultations held during the session of the Legal Subcommittee at Geneva involved a relatively small number of delegations and that the delegation of Mexico did not have an opportunity to participate in them. We are therefore not familiar with the arguments underlying the proposal to limit the scope of the application of the draft principles we are negotiating. We should like to know, in particular, precisely what forms of utilization of nuclear energy sources would fall outside the scope of the draft principles. My delegation would be grateful for an explanation from the sponsors of the draft Preamble so that we might properly consider their proposal.

The CHAIRMAN (interpretation from Spanish): At this point I should like to say, having taken very much to heart the remarks made by the representative of Mexico, that this afternoon, as I have announced, during our informal consultations on nuclear power sources, there will be an extensive opportunity to discuss these issues.

Mr. TELLES RIBEIRO (Brazil): Although the Legal Subcommittee was not able to finalize the draft principles on nuclear power sources in outer space at its thirty-first session, my delegation considers that the deliberations in Geneva were quite productive and that some important advances were achieved on the three substantive items on its agenda. As many speakers have noted, active discussions were conducted in a constructive atmosphere, reflecting sincere efforts by delegations to reach common ground for further progress.

(Mr. Telles Ribeiro, Brazil)

With regard to the agenda item on the definition and delimitation of outer space and on the character and utilization of the geostationary orbit, my delegation wishes to express its appreciation for the contributions made by the delegations of the Russian Federation and Colombia, which have provided documents that served as a useful basis for our deliberations.

The questions concerning the legal régime for aerospace objects contained in working paper A/AC.105/C.2/L.189, submitted by the delegation of the Russian Federation, raised many interesting elements for the Subcommittee's consideration that deserve to be discussed in greater depth at future sessions. In this regard my delegation is of the view that the Subcommittee should, inter alia, try to compile the current practices of States during the relevant phases of launching or landing of aerospace objects with a view to identifying those areas where clarifications from a legal perspective might be useful.

(Mr. Telles Ribeiro, Brazil)

My delegation wishes to thank the representative of Colombia, Mr. Alfredo Rey, for the very comprehensive and constructive exposition presented yesterday concerning the question of the geostationary orbit. We welcome the open spirit in which his delegation and a number of other delegations are approaching the subject and we stand ready to cooperate in the search for a solid basis to make practical progress on this question.

My delegation would also like to support the pertinent observations made yesterday by the representative of Chile, Mr. Raimundo Gonzalez, concerning the need for clear criteria for the delimitation of outer space, lest ambiguities and uncertainties arise between segments subject to the sovereignty of States and areas which constitute the common heritage of mankind.

My delegation is pleased by the positive and constructive discussions we had in the Working Group on the legal aspects related to the application of the principle that the exploration and utilization of outer space should be carried out for the benefit and in the interests of all States, taking into particular account the needs of developing countries. As you yourself mentioned in your opening statement, Mr. Chairman, discussions on this item were "preliminary but detailed", focusing specifically on working paper A/AC.105/C.2/L.182 submitted by Argentina, Brazil, Chile, Mexico, Nigeria, Pakistan, the Philippines, Uruguay and Venezuela at the thirtieth session of the Legal Subcommittee. Under the skilful chairmanship of Mr. Raimundo Gonzalez, delegations engaged in an active exchange of views on the contents of this working paper, presenting relevant comments and clarifications. My delegation is especially grateful to those delegations that offered valuable suggestions for further improving some of the ideas

(Mr. Telles Ribeiro, Brazil)

contained in the working paper and, together with other sponsors, intends to take those views in due account at a future revision of the working paper.

In particular, my delegation shares the views expressed by the representative of Argentina yesterday to the effect that the contents of the working paper in no way detracts from the relevance of existing cooperation in space activities at bilateral, regional and multilateral levels, nor tries to impose a compulsory character on international cooperation in this field. Its main purpose is the promotion of a joint exercise in the search for mutually beneficial forms of cooperation among States with different levels of space capabilities.

My delegation also wishes to recall that at the session in Geneva the Chairman of the Working Group, who presented working paper A/AC.105/C.2/L.187, had tried to highlight similarities and discrepancies in the approaches of various States to the subject under review and had drawn particular attention to paragraph 10 of the paper, in which he had noted

> "that all respondents agree that the main, and perhaps the most practical and promising, way of realizing the principle contained in the first sentence of article I of the Outer Space Treaty is by further developing international cooperation in the exploration and peaceful uses of outer space." (A/AC.105/C.2/L.187, para. 10)

In effect, the detailed and useful discussions held by the Working Group on working paper A/AC.105/C.2/L.182 served precisely to identify ways and means for further developing such cooperation, and therefore flowed logically from the Chairman's own working paper.

While delegations are entirely free to address or present any working paper they deem appropriate, it should be noted that the report of the Working Group reflects faithfully the differing degrees of attention devoted to the

(Mr. Telles Ribeiro, Brazil)

various working papers before the Group. Therefore, the Chairman's working paper, while constituting an important contribution to the work of the Subcommittee on this subject, could not be considered "the focus of our work next year", as suggested by one delegation, but rather "one" of the documents that delegations may wish to discuss within the overall framework of the consideration of the question of space benefits, together with other relevant documents.

Turning to the item "The elaboration of draft principles relevant to the use of nuclear power sources in outer space, with the aim of finalizing the draft set of principles at the current session", my delegation notes that intensive informal consultations were conducted in Geneva with the aim of solving the few remaining obstacles to the completion of the whole set of principles.

After patient and untiring efforts, the Chairman of the Working Group, Mr. Franz Cede, and later Mr. Helmut Freudenschuss on his behalf, prepared two "working non-papers" that could provide a good basis for reaching a consensus on the outstanding principles.

Having participated in these informal consultations, my delegation feels that those documents are the maximum common denominator possible. The language contained in the texts may not be to the complete satisfaction of all delegations. In fact, it may not be to the complete satisfaction of any delegation. This equal distribution of discontent may be proof that we have all reached our bottom lines.

For my delegation, ensuring the safety and protection of populations from nuclear hazards comes first and foremost in our considerations. With a vast land mass and densely populated areas, Brazil may be exposed to future accidents involving nuclear power sources (NPS). Therefore, it is essential

(Mr. Telles Ribeiro, Brazil)

that the draft set of principles provide fully adequate guidelines and criteria for the safe use of NPS, that it determine the most competent party to conduct the safety assessment, and that adequate prior notification be given to countries most vulnerable to potential accidents.

In this respect, my delegation cannot accept formulations that would attribute to parties not sufficiently qualified, either scientifically or technically, the responsibility for conducting a safety assessment of NPS with which they are not familiar. Such a course would entail either a deficient assessment, endangering the safety of third parties; or the need for full access of those parties to the manufacturer's facilities and production processes; or the emergence of "launching States of convenience" having only nominal jurisdiction and control. In any of the aforementioned cases, further and detailed consideration of their implications would become necessary.

As most delegations have previously stated, negotiations on this draft set of principles have reached a point that cannot usefully go further. We must decide whether we can cut at this session the Gordian knot that has been tying up the adoption of the draft principles of NPS or we must go on weaving the endless garment of Penelope.

Ms. LOSTY (United Kingdom): Mr. Chairman, as this is the first intervention by the United Kingdom delegation at the thirty-fifth session of the Committee on the Peaceful Uses of Outer Space, I should like to take this opportunity to add my delegation's satisfaction at seeing you once again presiding over the Committee's deliberations. We share the sentiments of other members in expressing our confidence in the progress that the Committee will achieve under your chairmanship.

(Ms. Lonty, United Kingdom)

Let me first of all restate for the record that the United Kingdom remains unconvinced of the need for a definition and delimitation of the boundary between airspace and outer space. However, there is no doubt that document A/AC.105/C.2/L.189, submitted in this context by the Russian Federation, raises a number of interesting questions.

(Ms. Losty, United Kingdom)

The following is a reiteration of my delegation's preliminary views on the topic. In considering the necessity for a legal regime for aerospace vehicles, let us look first of all at the three types of aerospace craft under development.

First, the ballistic type, which takes off vertically, is powered by rockets and glides back with limited aerial manoeuvrability, to land on an extended runway. Current examples of this are the United States space shuttle and the Buran of the former Soviet Union. Future contenders include Japan's Hope vehicle.

The second type of aerospace craft is the horizontal take-off and landing, or HOTAL, type. One variant of this, for example, the German Sanger concept and the Russo-British-Ukrainian Antonov interim HOTAL concept, would incorporate a flyback booster stage. This ferries the space plane up to high altitude, whereupon the space plane disengages and uses rocket power to achieve orbit. The other variant of this HOTAL type in the longer term is the single-stage-to-orbit vehicle. This vehicle would take off and land from a standard runway, using a combination of air-breathing engines and rockets. It would return to Earth in a fully manoeuvrable way to land on a conventional runway, increasing safety by permitting controlled evasive action. The United States National Aerospace Plane and the British HOTAL and Skylon variant are aiming in this direction.

The third generic type of aerospace craft in the much longer term is the advanced supersonic transport. This would behave as an aircraft for most of its flight, except for performing a fractional orbit to speed its ground coverage and cut commercial flight times between terrestrial points.

(Ms. Losty, United Kingdom)

My delegation does not believe that a special legal regime for aerospace vehicles is necessary for the foreseeable future. From a functional perspective, both the ballistic type and the HOTAL type of aerospace craft use the interstitial zone between currently navigable airspace and recognised outer space as a zone of transition and not of operation. The ballistic type is a dedicated space object which only incidentally uses airspace. The HOTAL type, although potentially capable of using airspace more fully, would do so only to increase efficiency and reduce cost to and from Earth orbit. Therefore, for the foreseeable future my delegation sees only a necessity for practical coordination with relevant air-traffic-control systems within existing flight information regions to ensure collision avoidance.

As for the third type, the advanced supersonic transport, it is too early to say whether it will operate in the interstitial zone or not. But it seems likely that, given its Earth-orientated mission with only peripheral outer-space involvement, it will be treated as an aircraft for the purposes of the 1944 Chicago Convention and its technical annexes. The latter can be amended to take into account any special circumstances engendered by such missions.

My delegation doubts that any State will wish to undermine the certainty of space law, which provides in article II of the 1972 liability Convention for absolute liability of the launching State in the event that a space object causes damage in the airspace or on the ground. This space-law certainty, coupled with pragmatic coordination with highly regulated airspace, militates against the necessity for a sui generis regime in the foreseeable future.

(Ms. Losty, United Kingdom)

Turning briefly to the geostationary orbit (GSO), again the views of my delegation are well known and remain unchanged. We consider that the International Telecommunication Union (ITU) is well able to handle extant problems inherent in managing the orbit spectrum resource efficiently, economically and so as to enable countries or groups of countries to have equitable access to it in accordance with article 33 of its Nairobi Convention. However, one problem in this context which might well require our Committee's involvement is that of debris in the GSO. The matter is complicated by the fact that the GSO is not purged of debris over time, as is the case with lower-Earth orbits. It may be that our Committee will need to consider in time the viability of consolidating in a normative way certain practices, such as the boosting of geostationary spacecraft into "graveyard" orbits. However, this may be better dealt with when space debris becomes a fully fledged item on our agenda, as it surely should once the Scientific and Technical Subcommittee has clarified the issues involved for us. My delegation looks forward to working actively in pursuit of satisfactory solutions to the debris problem to ensure that outer space may continue to be free for exploration and use by all States on a basis of equality, in accordance with article I of the outer space Treaty.

On the question of the outstanding principles on nuclear power sources in space, the United Kingdom remains committed to a consensus solution and supports the changes proposed for Principle 12, which allow for a review of the principles after a reduced period of time.

Finally, on the question of space benefits, my delegation will make separate statements under agenda item 10 of the Committee - spin-off benefits in space technology.

Mr. POCAR (Italy): Since this is the first time that my delegation has spoken at this session of the Committee, I wish to express our deep satisfaction at seeing you again, Mr. Chairman, presiding over our deliberations. The Committee could not be in better hands. Your wise and constructive guidance will certainly be of enormous help to all of us, both in finalizing, as we hope, part of the work of the Committee and in making progress on the other items before us for consideration.

(Mr. Pocar, Italy)

Commenting on agenda item 8, the Italian delegation endorses with satisfaction the report of the Legal Subcommittee on its thirty-first session and the steps forward it has made in various respects. As to the main topic on the Legal Subcommittee's agenda - the utilization of nuclear power sources in outer space - these steps forward, made on the basis of the work carried out by the Scientific and Technical Subcommittee, should indeed allow our Committee to finalize the set of principles under elaboration, in compliance with the resolution adopted by the General Assembly last year.

When the adoption of such an important body of principles as the one under consideration is at hand, it is only natural that perplexities and the temptation to further improve a text that will guide future activities should arise. However, at the present stage of our deliberations, and in the light of the long and constructive debates over the years in both Subcommittees, my delegation is of the view that the well-balanced proposals made so far justify a conclusion of our work and that a final effort should be made to this end. We are ready to make our full contribution in an open spirit of cooperation in order to reach a satisfactory solution to this urgent matter.

Let me now turn briefly to the other items discussed within the Legal Subcommittee. With regard to agenda item 4, we have taken note of the current status of the debate and followed with attention and interest the statements and proposals made by other delegations in the Subcommittee and in the Committee. We would like to say that we are not, as a matter of principle, against exploring new or alternative approaches to the issues that are on the agendas of the Committee and of its Subcommittees. However, as our delegation has stated on previous occasions, we still do not think that the subject of the delimitation of outer space has at present any standing in current international space law.

(Mr. Pocar, Italy)

As to the geostationary orbit, the problems the Subcommittee might consider are already being dealt with by the International Telecommunication Union (ITU), and we share the point of view expressed by other delegations that moves that could undermine the efficient and well-balanced regulation made by the ITU should be avoided.

Our delegation has followed with interest the developments in the consideration of item 5 on the Legal Subcommittee's agenda concerning the legal aspects related to the application of the principle that the exploration and utilization of outer space should be carried out for the benefit and in the interests of all States, taking into particular account the needs of developing countries. In particular, we wish to note that the report of the Chairman of the Working Group on the information submitted by States on their national legislation and their practices related to space research and activities is extremely helpful and shows that fruitful cooperation is already going on between many States, including developing countries. Such spontaneous cooperation, based on different approaches - especially at the bilateral level - should be further encouraged and the forms in which it takes place disseminated with a view to developing a general framework in the interests of all States.

In conclusion, let me express my delegation's satisfaction at the additional measures agreed upon by the Subcommittee to improve the utilization of conference servicing resources. Such measures, together with the rotation adopted in the discussion of the items on the agenda, will certainly contribute to a further rationalization of our work.

The CHAIRMAN: We have thus concluded our consideration of agenda item 8.

SPIN-OFF BENEFITS OF SPACE TECHNOLOGY: REVIEW OF CURRENT STATUS

Mr. CHANDRASEKHAR (India): Our delegation wishes to make a few remarks on the agenda item on the spin-off benefits of space technology. In past sessions of the Committee, our delegation made presentations on the efforts and status of the promotion of spin-off benefits of space activities undertaken by the Indian Space Programme. Also, we dealt with various aspects related to the needs and specific measures for promoting international cooperation in this area.

The very aim of the Indian Space Programme is the development and application of space technology for peaceful uses and for assisting the rapid development of the nation through its many beneficial applications. Hence, from the very beginning, the Indian Space Programme laid emphasis on the development and promotion of such a wider spread of applications and on tuning the programme towards meeting these needs on a self-reliant basis.

Accordingly, conscious efforts have been focused on involving potential users in the definition of needs and in the conduct of application experiments on a wider scale and in the development of human resources in the user organizations for effective applications of space technology. At the same time, stress was also placed on the maximum use of national industries for the space projects so that they might not only support the various development and manufacturing needs of space projects but also spur the growth of applications by servicing user needs for space applications.

Also, they are actively encouraged and assisted in realizing spin-off products and applications. This is attempted through a technology-transfer programme from the space laboratories to competent industries on a promotional basis and carried out through a host of measures, such as the wider

(Mr. Chandrasekhar, India)

dissemination of information, assistance during production in industry, seminars and training programmes, and promotional pricing, among other things.

Technologies for over 180 products and processes have been transferred to Indian industries, and a predominant proportion of these are used for servicing space-applications growth, such as, for example, various types of satellite communication terminals, including television reception systems, weather and meteorological data communication systems, equipment for rural telegraphic services, disaster-warning systems, and remote-sensing applications equipment for users, besides several spin-off products, such as adhesives, chemicals, laboratory instruments and computer-oriented systems.

For promoting the wider spread of spin-off benefits of space technology, there is a need to energize further action and stronger international cooperation. One of the fundamental requirements for generating spin-offs in various countries is their participation in space activities that offer opportunities for making innovations and technological developments or adaptations.

(Mr. Chandrasekhar, India)

In this regard, assistance and encouragement for indigenous development of certain systems or equipment in various developing countries should be given; in particular, several ground systems for space applications could be developed or manufactured in the developing countries, possibly at lower cost. Further, advanced countries could consider promoting exports of such systems from developing countries, to satisfy their own needs and thereby help sustain industries in developing countries. Information exchange on beneficial spin-off technologies from space should be further strengthened so that these can facilitate indigenous efforts in various countries to meet their own needs and those of others.

It is necessary to ensure that the increased commercialization of space services does not pose a serious threat to the free exchange of information or to the encouragement of the development of products in connection with space applications and spin-offs. On the other hand, there is a need to consider ways in which commercial activities in advanced nations can be harmonized with the interests of developing countries and incentives for development there. In this regard, we suggest that the United Nations Programme on Space Applications should devote at least one of its training seminars or expert meetings each year to the subject of promoting spin-off benefits from space.

The Committee has already endorsed a recommendation that space agencies that are actively involved in a wide spectrum of space activities and applications should consider allocating at least a small portion of their budgets to promoting spin-off benefits in various countries. The Committee should reiterate this appeal, and actively encourage such measures. Unless concerted efforts are made internationally for greater assistance and promotional measures, the wider spread of spin-offs from space will not occur.

Mr. CHEN Zhongqing (China) (interpretation from Chinese): I would like to thank you, Sir, for giving me the opportunity to introduce briefly to the members the working paper submitted by the Chinese delegation to the current session entitled "Spin-off benefits of space technology", contained in document A/AC.105/L.194.

Our preliminary experiences in the use of space technology in civilian production have shown obvious spin-off benefits. It is true that our research work started in the 1970s, but it was only after China adopted the policies of reform and of opening to the outside world about a decade ago that major development in this field began.

Our space industry is a multidisciplinary, high-technology industry that has in its possession the most advanced knowledge of science and technology, a great number of first-rate scientists and technicians and the most modern equipment. Therefore, after fulfilling the national space plan, it still has the spare capacity to carry out other civilian production and bring further economic benefits to society.

In the past 10 years or so, the Chinese space industry has been very successful in its conversion to civilian production, manufacturing thousands of non-space products, such as cars, household appliances, lathes and cutting and measuring tools. The value of the civilian products created by the Ministry of Aerospace Industry has been increasing at an annual rate of 30 per cent in recent years, and its share in the total industrial production of the Ministry has also grown, from 10 per cent in 1980 to 67 per cent in 1990.

Thus, our space industry has not only contributed to our national economy and construction by providing our people with the numerous products they need, it has also, through its superior technology and equipment, given impetus to

(Mr. Chen Zhongqing, China)

the economic and social development of many regions of China. Moreover, it has also succeeded in using the market mechanism of the technology market to promote technological spin-offs so as to facilitate the progress of technology and cost-effectiveness in related fields.

Here, I should like to cite an interesting example to illustrate the potential reach of space technology spin-offs. On 15 December 1989, the world's biggest outdoor bronze statue of Buddha was inaugurated on top of Da Yu Mountain in Hong Kong after nearly three years of work by the Chinese space industry. It measures 26.4 metres in height, including the foundation, and weighs 250 tons. The design called for an exquisite piece of art that boasts not only classic elegance but also a modern design which will enable it to withstand the constant battering of the elements, including typhoons, the scorching sun, rainstorms and salty mist, and the attacks of fungi. Our space industry, using thin-wall-structure technology, aerodynamic tests, computer-assisted design, new mildew- and corrosion-resistant material, large-area bronze welding techniques and other high-technology processes has integrated modern space technology with traditional bronze craftsmanship and effected a perfect marriage of Buddhist art and modern civilization.

In the process of transferring space technology to civilian industry, it is extremely important to strengthen international cooperation. Over the past 10 years, the Chinese space industry has initiated nearly 100 joint ventures with foreign enterprises; it has imported much advanced equipment and many assembly lines to improve further the standard and quality of existing civilian products and to create favourable conditions for them to be exported.

In October 1991, a seminar on international cooperation for the conversion of military industry to civilian production was held in Beijing.

(Mr. Chen Zhongqing, China)

The seminar was organized jointly by the Chinese Association on the Peaceful Uses of Military Industrial Technology and the United Nations Centre on Science and Technology for Development. It was attended by almost 100 experts and officials from more than 10 countries. At the seminar, there were extensive exchanges of views on a great many subjects, including the transfer of space technology to civilian industry.

The use of space technology in civilian production has produced an enormous spin-off benefit, and it has a bright future. The Chinese space industry is striving to bring more high-technology products to the civilian market so as to improve the cost-effectiveness of our national economy. We are ready to strengthen economic and technological exchanges and cooperation with other countries so that, together, we can further increase the benefits of space techology for all mankind and contribute to the peaceful uses of outer space.

The meeting rose at 12 noon.